

Program: BE Biotechnology
Curriculum Scheme: Revised 2016
Examination: Final Year Semester VIII
Course Code: BTC801 and Course Name: Environmental Biotechnology
Time: 1 hour
Max Marks:50

- 1 Deforestation generally decreases
 - (a) Rainfall
 - (b) Drought
 - (c) Soil erosion
 - (d) Global warming
- 2 Afforestation is necessary for
 - (a) Soil conservation
 - (b) Soil erosion
 - (c) Well control
 - (d) Low humidity
- 3 Depletion of the ozone layer is damaging to human health. Negative effects include
 - (a) Skin cancers
 - (b) Osteoporosis
 - (c) Dyspepsia
 - (d) Chronic lower respiratory disease
- 4 The term "Environment" means
 - (a) Sum total of all conditions that the life and development of all organisms on earth
 - (b) Water and air
 - (c) Earth and water
 - (d) A combination of land, air & water in which humans, plants and animals live.
- 5 Which of the following is NOT a type of environmental degradation?
 - (a) Air degradation
 - (b) Water degradation
 - (c) Plant degradation
 - (d) Land degradation
- 6 Carbon dioxide is primarily called a greenhouse gas because
 - (a) Traps heat
 - (b) Traps light
 - (c) Traps warm currents
 - (d) Traps radioactive contaminants
- 7 Air pollution trends are strongly affected by
 - (a) Concentration of pollutants
 - (b) Source of pollutants
 - (c) Characteristics of pollutants
 - (d) Humidity
- 8 Which is the warmest layer of the atmosphere?
 - (a) Troposphere
 - (b) Stratosphere
 - (c) Thermosphere
 - (d) Mesosphere
- 9 As the exhaust gases and pollutants leave a stack, they mix with ambient air describing a
 - (a) Air flow
 - (b) Fume
 - (c) Flame

- (d) Plume
- 10 When an atmosphere has isothermal profile, it is _____.
- (a) Very stable
- (b) Slightly stable
- (c) Unstable
- (d) Very unstable
- 11 In a sludge tank, the gas mainly produced, is
- (a) Oxygen
- (b) Nitrogen
- (c) Hydrogen
- (d) Carbon dioxide
- 12 If a 2% solution of sewage sample is incubated for 5 days at 20°C and the dissolved oxygen depletion was found to be 8 mg/l. The BOD of the sewage is
- (a) 100 mg/l
- (b) 200 mg/l
- (c) 300 mg/l
- (d) 400 mg/l
- 13 Which of the following sewerage systems carry domestic and industrial wastewater?
- (a) sanitary sewers
- (b) storm sewers
- (c) combined sewers
- (d) storm and combined sewers
- 14 Nitrification efficiency is significantly suppressed as the temperature is
- (a) Increased
- (b) Decreased
- (c) Neutral
- (d) Maintained
- 15 While designing a trickling filter what would be the depth assumed?
- (a) 12-15m
- (b) 4-12 m
- (c) 16-20 m
- (d) 20-25 m
- 16 For rock packing low- rate trickling filters what is the hydraulic loading assumed?
- (a) 1-4 m³/m².d
- (b) 4-8 m³/m².d
- (c) 8- 12 m³/m².d
- (d) 12-15 m³/m².d
- 17 At minimum fluidisation flow rate, the gas flow velocity is also known as
- (a) Superficial velocity of the pellets
- (b) Terminal velocity of the pellets
- (c) Average velocity of the pellets
- (d) Transport velocity of the pellets
- 18 For rock type of packing in intermediate filtration trickling filters what is the hydraulic rate considered?
- (a) 4-10 m³/m².d
- (b) 10-15 m³/m².d
- (c) 20-25 m³/m².d
- (d) 25-30 m³/m².d
- 19 It contains many species like bacteria and round worms in trickling filter
- (a) Treated water
- (b) Wastewater
- (c) Air influent

- (d) Biofilm
- 20 Which of the following statements is true about the composition of Calcium Carbonate CaCO_3 in soft water?
- (a) 0 to 30 milligrams of CaCO_3 per litre
- (b) 30 to 60 milligrams of CaCO_3 per litre
- (c) 60 to 90 milligrams of CaCO_3 per litre
- (d) 90 to 120 milligrams of CaCO_3 per litre
- 21 What is the health effects of excess fluoride in drinking water?
- (a) Fluorosis
- (b) Toothaches
- (c) Lung disease
- (d) Intestinal infection
- 22 Find odd one:
- (a) Bioslurping
- (b) Bioventing
- (c) Biosparging
- (d) Bioreactors
- 23 Which of these are factors affecting bioremediation?
- (a) Unavailability of contaminants for microbial population
- (b) Sedimentation rate
- (c) Presence of oxygen & Nutrients
- (d) Washouts
- 24 _____ is the effect of Rhizosphere bio-degradation.
- (a) Immobilization
- (b) Stabilization
- (c) Biological degradation
- (d) Conversion
- 25 This bacterium can withstand the dosage of radiation, which are several times higher than what human cells can tolerate
- (a) Escherichia coli
- (b) Conus magus
- (c) Deinococcus radiodurans
- (d) Staphylococcus aureus
- 26 _____ is designed primarily to treat contaminants in vadose zone or capillary fringe
- (a) Anaerobic digestion
- (b) Bioventing
- (c) Biosplurging
- (d) Aerobic digestion
- 27 Which of the following is a strict anaerobe?
- (a) Enterobacter
- (b) Alcaligenes
- (c) Pseudomonas
- (d) Methanosarcina
- 28 Which of the following is the effect of environmental degradation?
- (a) Balanced ecosystem
- (b) Stable atmosphere
- (c) Loss of biodiversity
- (d) Urbanization
- 29 Identify cause of land degradation.
- (a) Over grazing & over grafting
- (b) Forestation

- (c) Soil conservation
 - (d) Excessive rains
- 30 Scrubbers efficiency depends on
- (a) Relative velocity between air inlet and air outlet
 - (b) Relative velocity between droplets and particulates
 - (c) Speed of pumps
 - (d) Relative velocity of flow of air
- Anaerobic bacteria often play important roles in bioremediation. Which of the following is not an electron acceptor used by anaerobes during biodegradation reactions?
- 31
- (a) CO_2
 - (b) NO_3^-
 - (c) Fe(III)
 - (d) H_2O
- 32 Negative soil pollution is
- (a) reduction in soil productivity due to erosion and overuse
 - (b) reduction in soil productivity due to addition of pesticides and industrial wastes
 - (c) converting fertile land into barren land by dumping ash, sludge and garbage
 - (d) reduction in soil productivity due to over use of chemical fertilizers
- 33 _____ is waste that has substantial or potential threats to public health or the environment.
- (a) Hazardous waste
 - (b) Solid waste
 - (c) Municipal Solid waste
 - (d) Household waste
- 34 Hazardous waste is classified on basis of
- (a) nature of presence
 - (b) location
 - (c) Biological, chemical & physical properties
 - (d) Effects caused by them
- 35 Corrosive waste include
- (a) Ignitable waste
 - (b) Chemically unstable waste
 - (c) Strong acid or alkali
 - (d) waste that emit ionizing energy
- 36 Ex-situ remediation involves
- (a) degradation of pollutants directly
 - (b) degradation of pollutants by genetically engineered organisms
 - (c) removal of pollutants and collection at a place to facilitate microbial degradation
 - (d) treatment of pollutants at the source
- 37 High BOD indicates
- (a) absence of microorganisms
 - (b) Low level of microorganisms
 - (c) intense level of microbial population
 - (d) moderate level of microorganisms
- 38 In which of the following treatment involve oxidation of organic constituents of the wastewater?
- (a) Primary treatment
 - (b) Secondary treatment
 - (c) Advanced treatment
 - (d) Final treatment

- 39 The phenomenon of scavenging particulate matter from air to serve as cloud condensation nuclei or undergoing capture by cloud water is called as _____.
- (a) Storm
 - (b) Washouts
 - (c) Raindrops
 - (d) Rainouts
- 40 Find the incorrect one with reference to non-soluble pollutants
- (a) Absorbed in soil
 - (b) lead to water pollution
 - (c) Mineralization
 - (d) Persistent